Figure 18: Gel after electrophoresis of DNA treated in various ways. Lane 1 - 17 μg/ml plasmid DNA (untreated control); Lane 2 - 17 μg/ml plasmid DNA and 50 μM $CuCl_2$; Lane 3 - 17 μg/ml plasmid DNA and 2.5 mM ascorbate; Lane 4 - 17 μg/ml plasmid DNA, 2.5 mM ascorbate, 50 μM $CuCl_2$, and 200 μM tetrapeptide (L-Asp L-Ala L-His L-Lys [SEQ ID NO:1]) (4:1 ratio tetrapeptide/copper); Lane 5 - 17 μg/ml plasmid DNA, 2.5 mM ascorbate, 50 μM $CuCl_2$, and 100 μM tetrapeptide (2:1 ratio tetrapeptide/copper); Lane 6 - 17 μg/ml plasmid DNA, 2.5 mM ascorbate, 50 μM $CuCl_2$, and 50 μM tetrapeptide (1:1 ratio tetrapeptide/copper); Lane 7 - 17 μg/ml plasmid DNA, 2.5 mM ascorbate, 50 μM $CuCl_2$, and 25 μM tetrapeptide (1:2 ratio tetrapeptide/copper); Lane 8 - 17 μg/ml plasmid DNA, 2.5 mM ascorbate, 50 μM $CuCl_2$, and 12.5 μM tetrapeptide (1:4 ratio tetrapeptide/copper); Lane 9 - 17 μg/ml plasmid DNA, 2.5 mM ascorbate, and 50 μM $CuCl_2$ (positive control); and Lane 10 - DNA ladder.

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Figure 19A: Formulas of peptide dimers according to the invention.

Figures 19B-D: Diagrams illustrating the synthesis of peptide dimers according to the invention.

Figure 20: TAE (tris acetic acid EDTA (ethylenediamine tetracetic acid)) agarose gel visualized with ethidium bromide showing attenuation of ROS-induced DNA double strand breaks in genomic DNA by D-Asp Ala His Lys. Lane 1 - no treatment; Lane 2 - $CuCl_2$, 50 μM; Lane 3 - ascorbic acid, 100 μM; Lane 4 - D-Asp Ala His Lys, 200 μM; Lane 5 - $CuCl_2$, 10 μM + ascorbic acid, 50 μM; Lane 6 - $CuCl_2$, 25 μM + ascorbic acid, 50 μM; Lane 7 - $CuCl_2$, 50 μM + ascorbic acid, 50 μM; Lane 8 - $CuCl_2$, 50 μM + ascorbic acid, 25 μM; Lane 9 - $CuCl_2$, 50 μM + ascorbic acid, 100 μM; Lane 10 - $CuCl_2$, 50 μM + ascorbic acid, 100 μM + D-Asp Ala His Lys, 50 μM; Lane 11 - $CuCl_2$, 50 μM + ascorbic acid, 100 μM + D-Asp Ala His Lys, 100 μM; Lane 12 - $CuCl_2$, 50 μM + ascorbic acid, 100 μM + D-Asp Ala His Lys, 200 μM.

Figure 21: TAE agarose gel visualized with ethidium bromide showing attenuation of ROS-induced DNA double strand breaks in genomic DNA by D-Asp Ala His Lys. Lane 1 - no treatment; Lane 2 - $CuCl_2$, 50 μM; Lane 3 - ascorbic acid, 500 μM; Lane 4 - D-Asp